

Applicant: Dan Mielke, et al
Serial No. 09/760,314
September 22, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

We claim:

1. (currently amended): ~~We claim a~~ A method for manufacturing vehicle hulls by molding ~~reducing or eliminating the need for reinforcing stringers oriented along the hull,~~ comprising the steps of:

applying a top skin coat having a first mating portion within a top mold;
applying a bottom skin coat having a second mating portion within a bottom mold;
applying a structural adhesive to at least one of the mating portions;
closing the top mold and the bottom mold together, thereby forming, ~~without using intermediary pieces between the first mating portion and the second mating portion,~~ a structural bond between the first mating portion and the second mating portion and intrinsically creating a unitary hull piece within the closed molds, said unitary hull piece including at least one cavity for the introduction of material for the formation of at least one intrinsic structural support between the top skin coat and the bottom skin coat.

2. (original) The method of claim 1, wherein a space between the top mating portion and the bottom mating portion filled by the adhesive is approximately between 1/8" and 3/4".

3. (currently amended): The method of claim 1, further comprising the steps of forming at least one ventilation hole through an outer surface of the piece into the cavity in the piece and a foam introduction hole; and introducing foam into the cavity in the piece through the foam introduction hole, whereby the foam provides structural support to the hull piece.

4. (currently amended): The method of claim 1, further comprising, after the step of applying a top skin coat and a bottom skin coat, the step applying reinforcements for accessories such as cleats and rod holders over the top skin coat and over the bottom skin coat.

5. (previously amended): The method of claim 4, wherein the structural adhesive is a methacrylate compound and the reinforcements comprise one of the group of phenolic and wood reinforcements.

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6. (previously amended): The method of claim 3, wherein the structural adhesive is given time to cure before the step of introducing foam occurs.

7. (previously amended): The method of claim 26, further comprising the steps of:
removing air between the bottom protective coat and the bottom skin coat after the step of applying the bottom skin coat over the bottom protective coat; and
removing air between the top protective coat and the top skin coat after the step of applying the top skin coat over the top protective coat;

8. (previously amended): The method of claim 7, wherein the step of removing air between the bottom protective coat and the bottom skin coat consists of applying vacuum to the bottom skin coat; and
the step of removing air between the top protective coat and the top skin coat consists of applying vacuum to the top skin coat.

9. (previously amended): The method of claim 7, further comprising, after removing the air between the bottom protective coat and the bottom skin coat and the air between the top protective coat and the top skin coat, the steps of:
checking the hardness of the of the bottom skin coat and the top skin coat; and
grinding out air trapped between the bottom skin coat and the bottom protective coat and the air between the top skin coat and the top protective coat after the top skin coat and the bottom skin coat harden.

10. (previously amended): The method of claim 1, further comprising the step of removing air trapped within the skin coat.

11. (previously amended): The method of claim 1, further comprising, after the steps of applying the bottom skin coat and the top skin coat, the steps of:
allowing the bottom skin coat and the top skin coat to cure, and
filling one or more running strakes in the bottom mold with putty.

12. (previously amended): The method of claim 1, further comprising the steps of:
applying a bottom layer of bulk fiberglass over the bottom skin coat and applying a top layer of bulk fiberglass to the top skin coat; and
removing air between the bottom layer of bulk fiberglass and the bottom skin coat and air between the top layer of bulk fiberglass and the top skin coat; wherein the mating portions are located on the bulk fiberglass.

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13. (previously amended): The method of claim 12, wherein the step of applying a layer of bulk fiberglass comprises the steps of:

applying at least one layer of chopped roving; and
applying at least one layer of knitted bi-directional reinforced fiberglass.

14. (previously amended): The method of claim 13, wherein reinforcements for accessories are added between the steps of applying at least one layer of chopped roving and applying at least one layer of knitted bi-directional reinforced fiberglass.

15. (previously amended): The method of claim 12, further comprising, after the step of applying the bottom layer of bulk fiberglass and applying the top layer of bulk fiberglass, thereby forming a top bonding surface and a bottom bonding surface, the step of grinding out bumps or overlaps in the bonding surfaces before closing the top mold and the bottom mold together.

16. (previously amended): The method of claim 12, further comprising, after the steps of applying the bottom layer of bulk fiberglass and applying the top layer of bulk fiberglass, the steps of:

placing clay on the bottom mating portion after the bottom layer of bulk fiberglass has cured;

test-closing the top mold and the bottom mold together;
separating the top mold and the bottom mold; and
measuring the thickness of the resulting mass of clay.

17. (currently amended): The method of claim 16, further comprising the step of resurfacing the bottom mating portion or the top mating portion to accommodate structural adhesive where indicated by a lack or an excess of the optimal thickness of modeling clay.

18. (previously amended): The method of claim 17, wherein the optimal thickness is approximately 1/8" to 3/4".

19. (withdrawn)

20. (withdrawn)

21. (previously added): The method of claim 1, wherein the structural adhesive is a methacrylate compound.

22. (previously added): The method of claim 1, further including the step of forming at least one foam introduction hole through the outer surface of the unitary hull.

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23. (previously added): The method of claim 22, further including the step of introducing foam into the foam introduction hole.
24. (previously added): The method of claim 23, further including the step of curing the foam prior to the opening of the top mold from the bottom mold.
25. (previously added): The method of claim 24, wherein the structural bond absorbs at least a portion of internal stress created by the foam.
26. (previously added): The method of claim 1, further including the steps of:
applying a protective coat within the top mold before the step of applying the top skin coat; and
applying a protective coat within the bottom mold before the step of applying the bottom skin coat.
27. (currently amended): ~~We claim a~~ A method for manufacturing at least partially hollow vehicle hulls within a top mold and a bottom mold closed together, comprising the steps of:
placing a top hull layer having a top mating surface within a top mold;
placing a bottom hull layer having a bottom mating surface within a bottom mold;
placing a structural adhesive on at least one mating surface;
closing the top mold and the bottom mold together; and
allowing the structural adhesive to cure,
~~wherein whereby~~ a structural bond is formed between the mating surfaces by the cured structural adhesive,
~~wherein whereby~~ a unitary piece is formed within the closed molds from the combination of the top hull layer, the bottom hull layer and the structural adhesive located between the top mating surface and the bottom mating surface, and
wherein the unitary piece includes at least one cavity for the introduction of material for the formation of at least one intrinsic structural support between the top hull layer and the bottom hull layer.
28. (new): A method for manufacturing vehicle hulls by molding reducing or eliminating the need for stringers, comprising the steps of:

applying a top skin coat having a first mating portion within a top mold;
applying a bottom skin coat having a second mating portion within a bottom mold;
applying a structural adhesive to at least one of the mating portions;

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closing the top mold and the bottom mold together, thereby forming a structural bond between the first mating portion and the second mating portion and creating a unitary hull piece including at least one cavity.

and, after the steps of applying the bottom skin coat and the top skin coat, the steps of:
allowing the bottom skin coat and the top skin coat to cure, and
filling one or more running strakes in the bottom mold with putty.

29. (new): A method for manufacturing vehicle hulls by molding reducing or eliminating the need for stringers, comprising the steps of:

applying a top skin coat having a first mating portion within a top mold;
applying a bottom skin coat having a second mating portion within a bottom mold;
applying a structural adhesive to at least one of the mating portions;
closing the top mold and the bottom mold together, thereby forming a structural bond between the first mating portion and the second mating portion and creating a unitary hull piece including at least one cavity,

further comprising the steps of:

applying a bottom layer of bulk fiberglass over the bottom skin coat and applying a top layer of bulk fiberglass to the top skin coat; and

removing air between the bottom layer of bulk fiberglass and the bottom skin coat and air between the top layer of bulk fiberglass and the top skin coat; wherein the mating portions are located on the bulk fiberglass, wherein the step of applying a layer of bulk fiberglass comprises the steps of:

applying at least one layer of chopped roving; and

applying at least one layer of knitted bi-directional reinforced fiberglass.

30. (new): The method of claim 29, wherein reinforcements for accessories are added between the steps of applying at least one layer of chopped roving and applying at least one layer of knitted bi-directional reinforced fiberglass.

31. (new): A method for manufacturing vehicle hulls by molding reducing or eliminating the need for stringers, comprising the steps of:

applying a top skin coat having a first mating portion within a top mold;
applying a bottom skin coat having a second mating portion within a bottom mold;
applying a structural adhesive to at least one of the mating portions;

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closing the top mold and the bottom mold together, thereby forming a structural bond between the first mating portion and the second mating portion and creating a unitary hull piece including at least one cavity,

further comprising the steps of:

applying a bottom layer of bulk fiberglass over the bottom skin coat and applying a top layer of bulk fiberglass to the top skin coat; and

removing air between the bottom layer of bulk fiberglass and the bottom skin coat and air between the top layer of bulk fiberglass and the top skin coat; wherein the mating portions are located on the bulk fiberglass, further comprising, after the step of applying the bottom layer of bulk fiberglass and applying the top layer of bulk fiberglass, thereby forming a top bonding surface and a bottom bonding surface, the step of grinding out bumps or overlaps in the bonding surfaces before closing the top mold and the bottom mold together.

32. (new): A method for manufacturing vehicle hulls by molding reducing or eliminating the need for stringers, comprising the steps of:

applying a top skin coat having a first mating portion within a top mold;

applying a bottom skin coat having a second mating portion within a bottom mold;

applying a structural adhesive to at least one of the mating portions;

closing the top mold and the bottom mold together, thereby forming a structural bond between the first mating portion and the second mating portion and creating a unitary hull piece including at least one cavity,

further comprising the steps of:

applying a bottom layer of bulk fiberglass over the bottom skin coat and applying a top layer of bulk fiberglass to the top skin coat; and

removing air between the bottom layer of bulk fiberglass and the bottom skin coat and air between the top layer of bulk fiberglass and the top skin coat; wherein the mating portions are located on the bulk fiberglass, further comprising, after the steps of applying the bottom layer of bulk fiberglass and applying the top layer of bulk fiberglass, the steps of:

placing clay on the bottom mating portion after the bottom layer of bulk fiberglass has cured;

test-closing the top mold and the bottom mold together;

separating the top mold and the bottom mold; and

measuring the thickness of the resulting mass of clay.

33. (new): The method of claim 32, further comprising the step of resurfacing the bottom mating portion or the top mating portion to accommodate structural adhesive where indicated by a lack of or an excess of the optimal thickness of modeling clay.

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34. (new): The method of claim 33, wherein the optimal thickness is approximately 1/8" to 3/4".

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Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 5. This sheet, which includes Figures 5 - 6, replace the original sheet including Figures 5 - 6.